

REMARKS

The Office Action dated January 29, 2008, has been reviewed and carefully considered. In response thereto, Applicants submit the Declaration of one of the inventors of the present invention, Manfred Heim, pursuant to 37 C.F.R. § 1.132 (the "Heim Decl."), which includes new evidence supporting patentability of the present claims. Applicants request reconsideration of the claims in view of the new evidence of patentability.

Claims 1-14 and 16-37 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent 6,146,773 to Kaule et al. ("Kaule") in view of U.S. Patent 4,791,017 to Hofmann et al. ("Hofmann"), U.S. Patent 6,202,591 to Witzman et al. ("Witzman") and Applicants' "admission" (Applicants use this term only for consistency, and do not suggest that the specification contains an admission). Applicants respectfully traverse the rejection and submit that claims 1-14 and 16-37 recite subject matter that is neither described nor suggested by the combination of cited prior art. In support of its position, Applicants submit additional evidence of patentability in the form of a Declaration under 37 C.F.R. § 1.132. In view of this evidence, the present rejections cannot be maintained.

What a prior art reference teaches one of ordinary skill in the art is a question of fact. *In re John R. Beatie*, 974 F.2d 1309, 1313 (Fed. Cir. 1992). The Heim Decl. includes fact evidence that shows that the prior art fails to disclose or suggest the features of a security element, or its method of production, as claimed in claims 1-14 and 16-37. Dr. Heim is an experimental physicist who is the team leader for the R&D division of Giesecke & Devrient, the Assignee of the present application, and a global company with nine thousand employees and over two billion in revenue. Dr. Heim has a long history working with and is very familiar with the particular techniques at issue in

the present application. Dr. Heim is at least one skilled in the art of manufacturing security elements. Heim Decl. ¶¶ 2-6.

Claim 1, from which claims 2-14 and 16-37 depend, recites a method for producing a security element or transfer element for securing documents of value or for protecting products. The method includes vapor depositing a substrate with a multicomponent evaporating material, which is transformed into the vapor phase by means of electron beam or resistance heating, such that the evaporized evaporating material deposits as a precious-metal-colored coating on the substrate. The method also includes steps of measuring a color composition of the coating by reflection measurement, comparing the measured color composition to a desired color composition, and correcting deviations in the color composition of the coating, from the desired color composition, by adjusting at least one of a heating power and an energy of an electron beam.

Fundamentally, the prior art cannot render the present claims obvious because it does not reach the problems described in the present application, much less disclose how to solve them.

As explained in the Heim Decl., gold and other precious metals colors are preferred for security elements. However, using actual precious metals is expensive. Heim Decl. ¶¶ 8-10.

The present invention entails using a combination of coating components to create a constant color tone. Heim Decl. ¶ 11. One of ordinary skill in the art would be surprised to learn that the color of a multicomponent changes over time, and would not know that this is due to different evaporation rates. Heim Decl. ¶ 25. The present application explains that controlling the coating over a 3,000 to 10,000 meter process is not trivial, and requires continuous correction. Heim Decl. ¶¶ 28-31.

Kaule discloses a security thread that has a magnetic layer of iron or nickel and an additional metallic layer that creates color effects. Kaule fails to teach or suggest

steps of measuring the color composition of a precious-metal-colored coating by reflection measurement, comparing the measured color composition to a desired color composition and correcting deviations in the color composition of the coating, from the desired color composition, by adjusting at least one of a heating power and an energy of an electron beam, as recited by Claim 1. To the contrary, Kaule is completely silent with respect to the method used to produce his metallic layer, as admitted by the Office Action (Paragraph 4, Page 2).

Hofmann fails to cure the deficiencies of Kaule. Hoffman's gold-toned underlayer 2 is deposited on substrate 1, over which gold surface layer 3 is then deposited. *See*, e.g., FIG. 7; Col. 5:4-11. Hoffman teaches that his gold-colored underlayer 2 matches the color of, is harder than, and does not wear away as quickly as, his gold surface layer 3. *See*, e.g., Col. 2:13-31, etc. While Hoffman discloses various deposition methods for underlayer 2, Hoffman fails to teach or suggest measuring the color composition of a precious-metal-colored coating by reflection measurement, comparing the measured color composition to a desired color composition and correcting deviations in the color composition of the coating, from the desired color composition, by adjusting at least one of a heating power and an energy of an electron beam, as recited by Claim 1.

The Office Action attempts to cure some of the deficiencies of the Kaule/Hoffman combination with Applicants' own statements. In particular, the Office Action cites to para. 22 of the present application. However, paragraph 22 merely states that devices existed for measuring the transmission and/or reflection and nothing more and that the present invention is not directed to an optical device. Heim decl. ¶ 32-33. At the time of the invention, one skilled in the art would understand that measuring the amount of light transmitted or reflected does not measure the color of the light. *Id.*

The Office Action principally relies on Witzman for allegedly disclosing the controlling of the composition thickness. Office Action at ¶ 7. Witzman fails to cure the above-described deficiencies in the prior art.

There are at least two deficiencies with Witzman. First, Witzman is concerned with color uniformity, whereas correcting color uniformity is not correcting deviations in color composition. Second, Witzman's correction of thickness is for single component coatings, and not applicable to multiple component coatings.

Witzman is directed to reflection, transmission and/or absorption of light. Heim Decl. ¶ 20. Witzman discloses that the key characteristic for a given component is thickness. Heim Decl. ¶ 21. According to Witzman, color is a function of optical interference, which is controlled by thickness. Heim Decl. ¶ 26. One skilled in the art would therefore understand Witzman's disclosure about optimizing the color of a coating, merely +to refer to a visual effect controlled by a thickness of the coating and not to the color composition of the coating. Heim Decl. ¶ 24. The optical interference of a single component simply fails to disclose or suggest correcting deviations in the color composition, or even a color composition. Id.

In fact, Witzman teaches away from the claimed multicomponent coating because Witzman discloses that each component should have a particular thickness. Heim Decl. ¶ 22. The skilled person would understand that with the approach of Witzman, only one coating is on top. Heim Decl. ¶ 23.

There are a number of challenges that, at the time of the invention, related to different evaporation rates of various components. Heim Decl. ¶¶ 14-17 and 28-31. The prior art fails to face these issues, much less propose solutions. Id.

Witzman fails to disclose, teach, or suggest of a step of measuring a color composition of the coating by reflection measurement. Heim Decl. ¶ 18. In fact, Witzman fails to disclose or suggest reflection measurement and actually teaches away by disclosing that optical interference can be measured based on thickness (which is not

measured by reflection measurement). Heim Decl. ¶¶ 18, 22 and 24. The Office Action's reference to Applicants' "Admission" fails to cure this deficiency because measuring the amount of light reflected (or transmitted) does not measure the color of light. Heim Decl. ¶ 33. The thickness measurement of Witzman is simply incompatible with a reflection measurement.

Properly weighing the fact evidence submitted against all evidence in the record, it must be concluded that the claims of the present invention would not have been obvious to the skilled person in view of the combination of cited prior art. Instead, the weight of the evidence clearly favors patentability. In view of the foregoing remarks and evidence presented herein, Applicants request that the rejection be withdrawn and claims 1-14 and 16-37 be allowed.

A Notice of Allowance is respectfully solicited.

An extension of time of four months from September 29, 2008 to January 29, 2009 is respectfully requested to make this paper timely filed. The required fee of \$1,730.00 under 37 C.F.R. § 1.17(a)(4) is concurrently paid by withdrawal of funds from Representative's Deposit Account No. 02-2135.

The Commissioner is hereby authorized to charge any fees and to credit any overpayments that may be required by this paper under 37 C.F.R. §§ 1.16 and 1.17 to Deposit Account No. 02-2135.

Respectfully submitted,

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